



Memorandum

OREGON DEPARTMENT OF FISH AND WILDLIFE UMPQUA WATERSHED DISTRICT

Date: November 2, 2004

To: Files

From: Dave Loomis

Subj: ODFW Cost Estimates for Diamond Lake FEIS under Revised Alternatives (#1- 5)

Sherri Chambers, Diamond Lake IDT Leader for the USFS Diamond Lake Restoration Project informed ODFW on November 1, 2004 that the IDT Team had decided to modify alternative #4 and also expand the timeline under each alternative (#1-5) to include 7 years (instead of 6) plus a contingency plan for an additional 5 years if chub are present in the lake at that time. This assumes that chub would be at “discoverable levels” under the proposed monitoring plan under Alternative #2, #3, and #5, or at current levels under Alternative #1, or some “significantly reduced” level under alternative #4.

Possible alternatives for future actions at Diamond Lake now include Alternative #5 and a modified #4 as part of an effort to incorporate public comments in recent weeks. I based the following cost estimates as a result of these revised stocking and restoration plans. Cost estimates can be used as needed for further review and analysis for the FEIS.

The preliminary annual stocking and monitoring plans have not been approved, but are necessary for comparison purposes of the alternatives related to angler effort, fish harvest, and analysis of several affected environment and environmental consequences. The suggested monitoring and stocking plans are based on the best approach under each alternative to meet the purpose and need of the overall actions with each respective alternative.

Alternative 1 (No Action / Legal-size trout)

- ODFW Fish Stocking (2005-2011) **\$202,000**

Current ODFW base program is 8000 pounds of fish stocked in Diamond Lake annually. Stocking under this alternative would be “legal-size” rainbow trout (3 per pound or about 8-inches in length). 24,000 fish release at \$3.30 per pound or \$1.10 per fish (2004 cost estimate based on ODFW direct costs in 01/03 biennium including fingerlings to trophy size trout, Fish Division, October 2003) Cost estimate for 2005 release is \$26,400. Following years projected 3% annual increase in cost per pound. Maximum annual cost estimate is \$31,000 for 2011.

- No Contingency Plan for 2012-2016

Alternative 2 (Proposed Action / Rotenone + fingerlings/catchable-size trout)

- ODFW Fish Stocking (2005-2011) **\$214,000**

Current ODFW base program is 8000 pounds of fish stocked in Diamond Lake annually. Stocking alternative would be “legal-size” rainbows for 2005 and early 2006 (prior to fish removal efforts before rotenone treatment). Post Treatment stocking levels will be guided by ecological recovery rate of lake, fish survival and growth rates, and fishery effort and harvest. Stocking levels based on annual fingerlings releases ranging from 100,000 to 300,000, and 10,000 to 25,000 catchable size trout (8-10 inches). Cost estimates in 2005 for fingerlings are 6.6 cents per fish and catchable trout are \$1.32 each. Maximum annual stocking cost estimate is \$37,000 for 2011.

- ODFW Fish Stocking (2012-2016) Contingency Plan **\$1,427,000**

ODFW would continue fingerling releases, but increase catchable-sized trout releases to trophy-size trout. Stocking costs would be about \$56,000 in 2012 and \$342,000 annually for 2013-2016.

- ODFW Fish Removal (Trapnets, seines, gillnets) **\$50,000**

ODFW would hire seasonal fisheries workers to trap, collect, and remove tui chub using various netting activities in 2006 prior to treatment.

- ODFW Fish Monitoring (Creel surveys, trapnets, outmigrant trap, assist with other monitoring) **\$300,000**

ODFW would hire seasonal fisheries workers to complete angler creel surveys, evaluations of trout population growth, survival, and behavior, and assist with water quality and biological indices data collection. Seven months per year (April- October) \$50,000 annually

Alternative 3 (Rotenone + Put & Take trout)

- ODFW Fish Stocking (2005-2011) **\$4,446,000**

Stocking under this alternative would be 24,000 “legal-size” trout only prior to rotenone treatment (2005 and 2006), followed by combination of “legal-size” 8-inch rainbow trout and “put-and-take” 12-inch trout releases. Cost estimate in 2005 for legal-size trout is \$1.10 per fish and \$2.85 each for 1-pound fish (sterile, domestic rainbow stock). Post treatment stocking levels for put-and-take trout will be guided by fishery effort and harvest, trout survival and growth rates, and ecological recovery rate of lake and predicted to range from 100,000 to 400,000 fish annually. Annual stocking cost estimate is \$1.27 million for 424,000 fish in 2011.

- ODFW Fish Stocking (2012-2016) Contingency Plan **\$2,550,000**

Stocking in 2012 will be the same as 2011. 2013-2016 stocking would be trophy-sized fish only at about \$320,000 annually.

- ODFW Fish Removal (Trapnets, seines, gillnets) **\$50,000**

ODFW would hire seasonal fisheries workers to trap, collect, and remove tui chub using various netting activities in 2006 prior to treatment.

- ODFW Fish Monitoring (Creel surveys, trapnets, outmigrant trap, assist with other monitoring) **\$300,000**

ODFW would hire seasonal fisheries workers to complete angler creel surveys, evaluations of trout population growth, survival, and behavior, and assist with water quality and biological indices data collection. \$50,000 annually.

Alternative 4 (Modified Mechanical/Biological Plan)

- ODFW Fish Removal (Trapnets, seines, gillnets) **\$270,000**

ODFW would hire seasonal fisheries workers to trap, collect, and remove tui chub using various netting activities annually for 6 years. Personal services costs are \$40,000 per year or \$240,000 total. Annual equipment costs would be \$10,000 in year 1 and year 4 and \$2500 in remaining years (supplies only).

- ODFW Fish Stocking 2005-2011 **\$2,749,000**

Stocking numbers under this alternative would be significantly higher starting in 2006. 85,000 catchable trout (8-10 inches) and 15,000 trophy trout (15 inches) would be stocked in 2005. 100,000 catchable trout and 50,000 trophy trout would be stocked in 2006. 2007-2010 stocking levels would average about 230,000 catchable trout and 10,000 trophy trout annually. The cost of a catchable trout is \$1.32 each and the trophy trout cost is \$5.50. Annual stocking cost estimate is \$454,000 for 240,000 fish in 2011.

- ODFW Fish Stocking (2012-2016) Contingency Plan **\$2,270,000**

Stocking would continue at 2011 levels through 2016. Annual costs are about \$454,000 for 240,000 fish.

- ODFW Fish Monitoring (Creel surveys, trapnets, outmigrant trap, fish diet studies, assist with other monitoring) **\$400,000**

ODFW would hire seasonal fisheries workers to complete angler creel surveys, evaluations of trout population growth, survival, and behavior, and assist with water quality and biological indices data collection. Personal Services is \$50,000 annually. A fisheries biologist would be hired for data compilation and analysis from the stocking program and the mechanical removal efforts to provide timely evaluation of each fish release group. Estimated cost of personal services and equipment/supplies is \$20,000 annually for 2006-2010.

Alternative 5 (Modified Rotenone and Stocking Plans)

- ODFW Fish Stocking (2005-2011) **\$313,000**

Current ODFW base program is 8000 pounds of fish stocked in Diamond Lake annually. Stocking alternative would be catchable-size and trophy rainbows for 2005 and early 2006 (prior to fish removal efforts before rotenone

treatment). Post Treatment stocking levels will be guided by ecological recovery rate of lake, fish survival and growth rates, and fishery effort and harvest. Stocking levels based on annual fingerlings releases ranging from 50,000 to 300,000, and 10,000 to 25,000 catchable size trout (8-10 inches). Cost estimates in 2005 for fingerlings are 6.6 cents per fish and catchable trout are \$1.32 each. Annual stocking cost estimate is \$38,000 for 2011.

- ODFW Fish Stocking (2012-2016) Contingency Plan **\$1,427,000**

ODFW would continue fingerling releases, but increase catchable-sized trout releases to trophy-size trout. Stocking costs would be about \$56,000 in 2012 and \$342,000 annually for 2013-2016

- ODFW Fish Removal (Trapnets, seines, gillnets) **\$50,000**

ODFW would hire seasonal fisheries workers to trap, collect, and remove tui chub using various netting activities in 2006 prior to treatment.

- ODFW Fish Monitoring (Creel surveys, trapnets, outmigrant trap, assist with other monitoring) **\$300,000**

ODFW would hire seasonal fisheries workers to complete angler creel surveys, evaluations of trout population growth, survival, and behavior, and assist with water quality and biological indices data collection. Seven months per year (April- October) \$50,000 annually

Rotenone Application Cost for Alternatives 2 & 3 & 5 (\$450,000-500,000)

The following budget detail was prepared based on the following estimated cost of activities in 2005 and 2006.

ODFW Project Coordinator (12 months)	\$75,000
Boats (Rentals/Transport/Supplies)	\$30,000
HAZMAT & Safety Equipment/Training	\$20,000
Engineering Design (Outlet weir, tributary weirs and traps)	\$25,000
Construction (ramps, docks, material storage,)	\$50,000
Outlet Weir Construction	\$100,000
Security (planning/coordination, training, implementation)	\$15,000
Chemical Application (lake, drip stations, equipment, training, Seasonal workers salaries, per diem, supplies)	\$150,000
<u>Total Estimate</u>	<u>\$465,000 (\$450-500,000)</u>